

## **CLAIMS**

1. A network node for an optical communications shared protection scheme network, the network node being arranged to provide optical signals to at least two transmission paths, the node comprising a load sharing router having at least two ports, a first port connected to a working transmission path, and a second port connected to a  
5 shared protection path.
2. A network node as claimed in claim 1, wherein said shared protection path is a ring, said second port being connected to said ring via an optical switching device arranged to switch signals transmitted to and from the second port in either direction  
10 around the ring.
3. An optical network comprising a plurality of network nodes, each network node being arranged to provide optical signals to at least two transmission paths, the node comprising a load sharing router having at least two ports, a first port connected to  
15 a working transmission path, and a second port connected to a shared protection path.
4. A method of transmitting packet traffic between first and second network nodes in a shared protection optical transmission network, the method comprising defining first and second traffic paths between said nodes, at least one of said paths  
20 being a shared protection path, and allocating traffic along said paths utilising link aggregation.
5. A method as claimed in claim 4, wherein said shared protection scheme is an optical shared protection ring, and wherein in the event of a failure or degradation of said  
25 protection path, the protect path is switched to be the other way around the ring.

6. A method as claimed in claim 4, wherein a failure in a transmission path is perceived by the nodes as a reduction in capacity by said nodes.
- 5 7. A computer program arranged to control the transmission of packet traffic in accordance with the method of claim 4.
8. A computer program as claimed in claim 7, the program being stored on a machine readable medium.